

7. (Amended) A method for performing cell-based operations identifying single cell status, employing a microfluidic device having a reservoir containing cells for said cell-based operations, said reservoir containing an appropriate viable cell supporting medium, a first capillary channel in fluid transfer relationship with said reservoir, an electroosmotic pump comprising a second capillary channel in fluid receiving relationship with said first channel, an electrokinetic medium in said second capillary channel and a pair of electrodes for creating an electrical field in said electrokinetic medium for moving electrokinetic medium in said second channel, and a detector, said method comprising:

applying an electrical field to said electrokinetic medium in said second capillary channel in a direction to remove liquid from said first channel, whereby cells move individually from said reservoir into said first channel;

adding by electrokinetic means into said first channel a compound of interest [to]for contact in said first channel with said cells;

moving said cells to the site of said detector; and

determining the effect of said compound on the status of said cells.

13. (Amended) A method according to Claim 7, wherein said [agent]compound of interest is an antagonist and said determining is a result of variation in signal by cells displacing in said conductive medium a fluorescent agent binding to said cells.

16. (Amended) A method according to Claim 14, wherein said [compound of interest]agent is contacted with said cells in said channel.

17. (Amended) A method according to Claim 14, wherein said [compound of interest]agent is labeled with a detectable label.